"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002200720015-2

2/2 021 UNCLASSIFIED PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0117891

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CULTURES OF MONKEY PERIPHERAL BLOOD LEUKOCYTES WERE IRRADIATED BY A 100 R DOSE OF X RAYS AT THE G SUB1, S, AND G SUB2 STAGES OF THE CELL CYCLE. THE FREQUENCY OF CHROMOSOME ABERRATIONS WAS DETERMINED ON METAPHASE CELLS. THE DATA OBTAINED SHOWED THAT THE GREATEST NUMBER OF CHROMOSOME ABERRATIONS WAS INDUCED IN THE CELLS IRRADIATED AT THE G SUB2 STAGE. CELLS IRRADIATED AT THE S STAGE AND EARLY G SUB1 STAGE ARE MORE RADIORESISTANT. CELLS IRRADIATED AT THE LATE G SUB1 STAGE HAD MORE ABERRATIONS THAN THOSE IRRADIATED AT THE STAGE S. AMONG THE ABERRATIONS INDUCED BY IRRADIATION AT THE STAGE G SUB1, ABERRATIONS OF THE CHROMOSOME TYPE PREVAILED, ALTHOUGH SOME ABERRATIONS OF THE CHROMATID TYPE WERE ALSO OBSERVED. MOST OF THE ABERRATIONS INDUCED AT THE STAGE G SUB2 WERE OF THE CHROMATID TYPE. FACILITY: INST. OF EXPERIMENTAL PATHOLOGY AND THERAPY, SUKHUMI, USSR.

UNCLASSIFIED

APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002200720015-2"

"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002200720015-2

Dzerzhanovskaya, V. A.

SOME RESULTS OF USING DISPERSION ANALYSIS FOR EVALUATING THE PHYSIOLOGIC REACTIONS OF COSMONAUTS DURING FLIGHT OF THE 'SOYUZ-3,' 'SOYUZ-4' AND 'SOYUZ-5' SPACESHIPS

/Article by V. I. Antonova, A. A. Butusqv, V. A. Dzerzhanovskaya, A. D. Yegorov, N. A. Ivashkina, G. G. Ignatova, [illegible] Lyumin, A. P. Polyakova and I. P. Svistunov; Moscow, Aktual'nyye Voprosy Kosmicheskoy Biologii i Meditsiny (Current Problems in Space Biology and Medicine), Russian, 1971, pp 9-11/

During the space flight of the "Soyuz-3," "Soyuz-4," and "Soyuz-5" ships, radiotelemetric systems were used in registering such physiologic parameters as the electrocardiogram (ECG), seismocardiogram (SCG) and pneumogram (PG). In processing this information it was possible to determine the frequency of cardiac contractions and the respiration rate and the principal ECG and SCG indices for each cosmonaut were measured.

The collected data were grouped in accordance with the stages in training and conducting space flight. The following periods were discriminated:

preflight (PF) period, including data obtained in an examination of crews during ordinary work activity 15-20 days prior to the flight;

prelaunching, including the results obtained during the registry of physiologic parameters several hours prior to the launching (PL-1) and during the periods of the five-one-minute countdown (PL-2);

active segment (AS), the segment in which the spaceship is put into orbit;

orbital flight (OF);

descent segment (D).

JPRS 56,499
14 July 72

APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002200720015-2"

"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002200720015-2

Dzerzhanovskaya, V.A.

QUANTITATIVE EVALUATION OF PHYSIOLOGIC INDICES OF COSMONAUTS DURING FLIGHT OF THE 'SOYUZ-6' - 'SOYUZ-8' SPACESHIPS

/Article by L. V. Antonenko, A. A. Butusov, V. A. Dzerzhanovskaya, A. D. Yegorov, N. A. Ivashkina, S. G. Ignatov, V. N. Lyamin, A. P. Polyakova and I. B. Svistunov; Moscow, Aktual'nyye Voprosy Kosmicheskoy Biologii i Meditsiny (Current Problems in Space Biology and Medicine), Russian, 1971, pp 7-9/

In conducting medical monitoring an evaluation of the health of cosmonauts during spaceflight is made on the basis of information received during radio conservations and television contacts, by an analysis of the registered physiologic parameters and the microclimatic parameters in the manned compartments, by conducting medical self- and mutual monitoring, etc. (Ye. I. Vorob'yev, et al., 1969; 1970).

In the process of decoding the physiologic parameters the frequency of cardiac contractions and the respiration rate were ascertained and the principal indices of the electrocardiogram and seismocardiogram were measured.

The principal objectives of the quantitative evaluation and the statistical analysis of physiologic data were:

evaluating the significance of the influence of different flight factors on physiologic indices;

determining the direction of change of physiologic indices during different flight periods for different cosmonauts;

evaluating the dynamics of the mean values of the physiologic indices during different flight periods and the individual characteristics of the reactions of cosmonauts;

JPRS 56,499
14 July 72

APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002200720015-2"

"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002200720015-2

USSR

UDC 536.581.3

DZHAFAROV, T. D., RODKIN, YE. A.

"Cryostat for Studying Optical Absorption under Uniaxial Compression"

Moscow, Pribory i Tekhnika Eksperimenta, No 6, 1971, pp 181-182

Abstract: The structural design and operating characteristics are presented for a cryostat designed to investigate the optical absorption spectra in semiconductors under uniaxial compression to 160 kg at T = 78 and 300° K. The force on the sample in the cryostat is created by a pneumatic chamber, and with a sample cross section of 4 × 0.5 mm^2, the pressure is ~8 tons/cm^2. Absorption spectra are presented for tellurium investigated in the presented cryostat using the UR-20 infrared spectrophotometer at T = 78° K. The spectra are presented for pressures of p = 0, 900 and 1,200 kg/cm^2. The light was polarized parallel to the crystallographic C-axis of the tellurium, and the direction of the compression was parallel to the C-axis. The cryostat can also be used for measurements on the IKS-21 spectrophotometer.

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002200720015-2

USSR

UDC 621.382.3

AVAK'YANTS, G. M., KARAYAN, G. S., DZHEREDZHYAN, A. A., Institute of Radio Physics and Electronics, Armenian SSR Academy of Sciences

"Inversion Phenomenon in Five-Layer Structures"

Yerevan, Izvestiya Akademii Nauk ArmSSR: Fizika, Vol 8, No 3, 1973, pp 205-212

Abstract: The authors find the current-voltage characteristic of a PNPNP structure when $\beta_2 + \beta_3 > 1$, and they study the condition of formation of sections with negative resistance on the current-voltage characteristic. It is shown that inversion of the sign of voltage displacement occurs on the central collector junction. Formulas are derived for the extremum points of the function V(I), and the existence of an intermediate interval with positive differential resistance is demonstrated. A new mechanism is suggested for the formation of negative resistance on the current-voltage characteristic of the fourth junction.

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002200720015-2

1/2 036 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--SPECTROSCOPIC STUDY OF THE LOW TEMPERATURE RADIOLYSIS OF SOME POLYOLEFINS -U-

AUTHOR-(04)-DZHIBGASHVILI, G.G., SLOVOKHOTOVA, N.A., LESHCHENKO, S.S., KARPOV, V.L.

COUNTRY OF INFO--USSR

D

SOURCE--KHIM. VYS. ENERG. 1970, 4(3), 281-2

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, NUCLEAR SCIENCE AND TECHNOLOGY, PHYSICS

TOPIC TAGS--IR SPECTRUM, RADIOLYSIS, POLYETHYLENE, PROPYLENE, BUTENE, COPOLYMER, LOW TEMPERATURE EFFECT, CYCLIC STRUCTURE, FREE RADICAL, POLYMER CROSSLINKING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3008/0861 STEP NO--UR/0456/70/004/003/0281/0282

CIRC ACCESSION NO--AP0137889

UNCLASSIFIED

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002200720015-2

2/2 036 UNCLASSIFIED

CIRC ACCESSION NO--AP0137889 PROCESSING DATE--27NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IR SPECTRA WERE STUDIED OF HIGH D. POLYETHELENE, ETHYLENE PROPYLENE COPOLYMER, AND ETHYLENE ALPHA BUTYLENE COPOLYMER, AFTER IRRADN. AT NEGATIVE 180DEGREES. THE APPEARANCE OF NEW IR BANDS OR THE INCREASE IN THE INTENSITY OF SOME OF THE ORIGINAL BANDS SHOWED THAT LOW TEMP., FREE RADICAL CROSSLINKING, FORMATION OF CYCLIC STRUCTURES (CYCLOPENTANES, CYCLOHEXANES), AND FORMATION OF TRANS VINYLENE GROUPS OCCURRED. FACILITY: FIZ. KHIM. INST. IM. KARPOVA, MOSCOW, USSR.

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APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002200720015-2"

"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002200720015-2

USSR

UDC: 51

DZHIBLADZE, N. I.

"On an Approximate Method of Solving Linear and Nonlinear Programming Problems"

Tr. In-t sistem upr. AN GruzSSR (Works of the Institute of Control Systems, Academy of Sciences of the Georgian SSR), 1971, 10, No 1, pp 5-16 (from RZh-Kibernetika, No 5, May 72, Abstract No 5V397)

Translation: Use of the idea of random search.

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002200720015-2

USSR

DZHIBLADZE, R. N., et al., Kvantovaya elektronika, Moscow, No 5, May 71, pp 120-122

dependences of the threshold population inversion of the operating levels on the pump power and on the degree of formation of absorptive centers are obtained from kinetic equations based on the experimental results. The ratio of the threshold difference of the populations of the levels to the overall number of atoms of neodymium for a fiber laser attains a magnitude of 0.7--0.9. Establishment of a stationary value ofthe absorption coefficient occurs with small concentrations of the absorptive centers. Received by editors,28 Apr 71.4 fig.6 ref.

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APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002200720015-2"

USSR

DZHIBLADZE, R.N., KUKHARSKIY, R.N., MUMLADZE, V.V.

"Regular Variations Of The Intensity Of Generation Of A Glass Fiber Laser Activated By Neodymium"

Kvantovaya elektronika, Moscow, No 5, May 71, pp 120-122

Abstract: The regular pulsations of generation intensity resulting from the appearance of absorptive centers in the glass fiber are investigated. The experiments were conducted on fibers activated by Nd^{3+} 120 cm long and 27-35 micrometer in diameter (diameter of core 20-25 micrometer) mixed in a reflector with flowing distilled water. Pumping was produced by two IFP-5000 gas-discharge pulse lamps. The time characteristics of the emission were studied with the aid of a FEU-22 photomultiplier on a S1-29 oscillograph. The concentration of absorptive centers was varied with the aid of an aqueous solution of $K_2Cr_2O_7$, cutting off the ultraviolet part of the spectrum. The dependences of the period of the pulsations and the generation delay time on the pump power were investigated. An anomalous growth of the pulsations period with an increase of the pump power was displayed, caused by the absorptive layers in the glass. The

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002200720015-2

USSR

UDC: 539.14+539.143

DZHIBUTI, R. I., KRUPENNIKOVA, N. B., MAMASAKHLISOV, V. I. (Member of the Georgian Academy of Sciences, Deceased), and TOMCHINSKIY, V. Yu.

"Charge Form factors of Li^6, Be^9, and C^{12} Nuclei in a Three-Particle Cluster Model"

Tbilisi, Soobshcheniya Akademii Nauk Gruzinskoy SSR, vol 68, No 1, 1972, pp 53-56

Abstract: This paper is the continuation of an earlier article by the same authors in the same journal mentioned above (Programma i tezisy 22-go yezhegodnogo soveshchaniya po yadernoy spektroskopii i strukture atomnogo yadra -- Program and Theses of the 22nd Annual Conference on Nuclear Spectroscopy and Atomic Nucleus Structures -- part 1, Leningrad, 1972, p 216; Soobshcheniya AN GSSR, 66, No 3, 1972, p 565) investigating the development of the K-harmonic method as applied to the nucleon association model. By using formulas developed in the earlier article together with the Reinal and Revai coefficients, the authors obtain in the present article expressions for the charge form factors of Li^6, Be^9, and C^{12} three-particle nuclei. The authors promise a future article comparing the results of the present paper with available experimental data.

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002200720015-2

1/2 022 UNCLASSIFIED PROCESSING DATE--09OCT70

TITLE--EFFECTIVE FORCES AND THE THREE BODY PROBLEM IN NUCLEAR PHYSICS -U-

AUTHOR-(02)-DZHIBUTI, R.I., KRUPENNIKOVA, N.B.

D

COUNTRY OF INFO--USSR

SOURCE--YAD. FIZ. 1970, 11(2), 355-60

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS, NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--THREE BODY PROBLEM, NUCLEAR PHYSICS, HELIUM ISOTOPE, INTEGRAL CROSS SECTION, PHOTOEFFECT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1980/0388 STEP NO--UR/0367/70/011/002/0355/0360

CIRC ACCESSION NO--AP0048660

UNCLASSIFIED

APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002200720015-2"

"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002200720015-2

2/2 022 UNCLASSIFIED PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0048660

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EFFECTIVE FORCES FOR THE PHOTODISINTEGRATION OF THE PRIME3 HE NUCLEUS WERE CALCD. BY USING THE 1 PARAMETER IRVING FUNCTION AND A NEW NONLOCAL N-N POTENTIAL WITH SEPARABLE VARIABLES. AT ALPHA SUBT EQUALS 0.68 FERMI PRIME NEGATIVE1, RESULTS SHOW: BINDING ENERGY MINUS 8.2 (THEORETICAL) COMPARED TO MINUS 8.49 MEV (EXPTL.); COULOMB ENERGY 0.81 (THEORETICAL) COMPARED TO 0.76 MEV (EXPTL.); NUCLEAR RADIUS, CALCD. FROM THE COULOMB ENERGY, 2.16 (THEORETICAL) COMPARED TO 1.97 PLUS OR MINUS 0.01 FERMI (EXPTL.); INTEGRAL CROSS SECTION OF DIPOLE PHOTOABSORPTION IS 67.2 (THEORETICAL) COMPARED TO 62 PLUS OR MINUS 6 MEV MB (EXPTL.). A CURVE FOR THE CROSS SECTION OF THE TOTAL PHOTODISINTEGRATION, I.E. PRIME3 HE (GAMMA, N)2P, REACTION IS CALCD. AND COMPARED WITH THE EXPTL. CURVE. FACILITY: INST. FIZ., TBILISI, USSR.

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002200720015-2

USSR UDC 669.1.539.216.2:621.785.3:538.248

DZHIDARYAN, V. A., Scientific Research Institute of Mathematical Machines, Yerevan

"Effect of Magnetomechanical Annealing on the Characteristics of Thin Iron-Nickel Films"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 32, No 3, Sep 71, pp 575-578

Abstract: New experimental results are discussed of the influence of mechanical stresses, applied in the process of magnetic annealing, on properties of Permalloy films with different parameters produced by vacuum vaporization with constant magnetostriction of different sign and magnitude. Reference is made to diagrams showing the dependence of the anisotropy field, the magnetoelastic parameter, and the magnitude of residual stresses σ_2 on the annealing temperature and the effect of magnetomechanical annealing on σ_2/σ_1, where σ_1=theoretical maximum stress. The constant monoaxial anisotropy magnitude at room temperatures over a period of more than 2.5 years is emphasized as an important feature arising in the process of magneto-l/l mechanical annealing. 3 illustr., 3 biblio. refs.

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002200720015-2

USSR D UDC 539.216.1: 21.7[illegible].3:[illegible].249

YEGIYAN, K. A., and [illegible], V. A., Yerevan Scientific-Research Institute of Mathematical Machines

"Change in Magnetoelastic Constant of Thin Ferromagnetic Films With Magnetic Annealing Along the Axis of Difficult Magnetization"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 30, No 2, Aug [illegible], pp [illegible]-[illegible]

Abstract: The influence of the angular dispersion of anisotropy on the value of the magnetoelastic parameter is studied theoretically and experimentally. In films with high angular dispersion of anisotropy, a nonlinear sector is noted on the curve $H_k(\lambda)$ in the area of low intensities, leading to a decrease in the apparent magnetoelastic constant. In order to determine the true magnetoelastic constant, it must be determined with high deformations in the linear sector of $H_k(\lambda)$. The experimentally observed nonlinear sector of $H_k(\lambda)$ can be qualitatively explained by dispersion of the direction of easy magnetization.

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002200720015-2

USSR

DZHIDZHOYEV, M. S., KOROLEV, V. V., MARKOV, V. N., PLATONENKO, V. G., and KHOKHLOV, R. V., Physics Department, Moscow State University imeni M. V. Lomonosov

"Detonation Gas-Dynamic Laser"

Moscow, Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 14, No 2, 20 Jul 71, pp 73-76

Abstract: This article describes a new type of gas-dynamic laser in which the solid material is detonated to obtain the initial high-temperature gas mixture. Previously the high-temperature mixture was obtained in the gas-dynamic lasers by the passage of shock waves in the gas media and by heating with an electric arc or by igniting the initial gases. The use of detonation of the solid material permits varying the initial pressure and temperature of the gas mixture in a wide range and also substantially simplifying and reducing the dimensions of the experimental set-up. Figure 1 shows a schematic of the experimental set-up; Figure 2 is an oscillogram of the impulse of generation, 500 μsec/unit; and Figure 3 shows the output energy. The authors state that by using liquid nitrogen in the described set-up, they can experimentally place the initial material in the reaction volume. By the use of other materials

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USSR

DZHIDZHOYEV, M. S., et al., Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 14, No 2, 20 Jul 71, pp 73-76

the experiments can be theoretically conducted at room temperatures. The article contains 3 figures and 10 bibliographic entries.

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002200720015-2

USSR

UDC 662.998

DZHIGIRIS, D. D., Candidate of Technical Sciences, DEM'YANENKO, YU. N., Engineer, MAKHOVA, M. F., Candidate of Technical Sciences, GUDZINSKIY, O. S., Engineer and MAZANOVA, N. I., Engineer

"Thermally Insulating Plates Based on Superfine Basalt Fibers"

Moscow, Stroitel'nyye Materialy, No 12, Dec 73, pp 19

Abstract: The basalt superfine fibers (BSFF) have a diameter less than 2 microns. These fibers are the base for the preparation of a soft, very effective insulation material which may be used in the temperature range -200 to +700° C. The BSFF have a high resistance to vibrations, acid, and steam. Values for specific volume, bonding hydroscopic tendency and rigidity are given as a function of plate thickness from 2 to 9.8 mm. The plates are prepared from a polyvinylacetate emulsion having a fiber concentration of 1.5 to 5 g/l of the BSFF. The plates were dried with a corresponding loss of weight of between 0.2-0.3%. These BSFF plates have the advantage of being composed of readily available materials and of having a short processing time -- 2-3 times less than that presently required for processing.

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002200720015-2

Acc. Nr: AP0043934 Ref. Code: UR 0016

PRIMARY SOURCE: Zhurnal Mikrobiologii, Epidemiologii, i Immunobiologii, 1970, Nr 2, pp 22-27

CONCERNING THE SPECIFIC PROPHYLAXIS OF DYSENTERY. REPORT VI. THE EFFICACY OF ENTERAL IMMUNIZATION WITH LIVE DYSENTERY VACCINE IN EXPERIMENTS ON MONKEYS

Yu. A. Belaya, K. N. Kavtaradze, V. D. Gekker, E. K. Dzhikidze

Immunogenic properties of live lyophilized dysentery vaccine prepared of attentuated strain Flexner 2a were studied on 45 monkeys macaca rhesus. Of this number 25 monkeys were immunized enterally, 5 times, at intervals of 3 to 4 days with live vaccine in doses of 15—50 milliard live microbial cells. Two weeks after the immunization they were infected with 75 milliard live microbial cells of a virulent strain Flexner 2a. The incidence of the disease in the experimental group was 7.6 less than among the nonimmunized 18 monkeys. A rise of agglutinins (3—11-fold) was noted in the process of immunization; preventive properties of the sera in testing on chick embryos showed no significant changes. Bacteria of vaccine strain were isolated for 1 to 4 days from the monkeys after immunization. There occurred no restoration of the virulence.

Thus, live Flexner dysentery vaccine was shown to be areactogenic, harmless and to possess immunological efficacy in experiments on monkeys.

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002200720015-2

USSR UDC: 621.374.32

ROGAVA, S. Ye., MANUKYAN, Yu. S., DZHIKIYA, K. S., ROGAVA, Z. Ye., Tbilisi Affiliate of the All-Union Scientific Research Institute of Metrology imeni D. I. Mendeleyev

"A Binary Pulse Counter"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 10, Apr 71, Author's Certificate No 298073, Division H, filed 27 Sep 69, published 11 Mar 71, p 193

Translation: This Author's Certificate introduces a binary pulse counter which contains the binary flip-flop counter proper with a ripple-through carry net based on AND elements, and also OR elements, delay elements and a half-adder. As a distinguishing feature of the patent, the device is designed for detection of malfunctions, simplification and increased counting speed. The zero-output terminals of the flip-flops for all digital places are connected to inputs of the corresponding AND elements, which are connected in series and form an auxiliary ripple-through carry net whose input is connected through a delay element to the counter input. The outputs of the AND circuits of the auxiliary ripple-through carry net are connected through an OR

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USSR

ROGAVA, S. Ye., et al., Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 10, Apr 71, Author's Certificate No 298073

element to the input of the half-adder. The outputs of the AND elements of the main ripple-through carry net are connected through a delay element and OR element to the second input of the half-adder.

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002200720015-2

USSR UDC 541.64:678.746:541.12

RAFIKOV, S. R., DZHILKIBAYEVA, G. M., CHELNOKOVA, G. N., SHALTUPER, G. B., Institute of Organo Elemental Compounds, Moscow, Academy of Sciences USSR, and Kazakh State University imeni S. M. Kirov, Alma Ata, Ministry of Higher and Secondary Specialized Education Kazakk SSR

"Kinetics of the Reaction of Triethyl Phosphite with Linear Halomethylated Polystyrene"

Moscow, Vysokomolekulyarnyye Soyedineniya 12, No 7, 1970, pp 1608-1613

Abstract: The kinetics of the Arbuzov reaction of triethyl phosphate (TEP) with linear iodomethylated polystyrene was studied in carefully purified dioxane over the temperature range 58-97°C. It was found that at temperatures exceeding 70°, isomerization of TEP accompanies the Arbuzov rearrangement. It was shown that the reaction rate constants in the interaction of TEP with iodomethylated styrene decreases as the reaction proceeds and the apparent activation energy depends on the temperature; it is 17.1 kcal/mole

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USSR

RAFIKOV, S. R., et al, Vysokomolekulyarnyye Soyedineniya 12, No 7, 1970, pp 1608-1613

at ~ 80°C, and 25.5 kcal/mole at higher temperatures. This is interpreted as an indication of diffusion processes becoming more prominent at higher temperatures. Data are presented on the degree of conversion of the iodomethylated groups of the polystyrene as a function of the reaction period, as well as on the degree of completion of the reaction as calculated from an analysis of the P and I contents of the reaction mixture.

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002200720015-2

USSR UDC [546.193:547.475.2]:543.253

YELENKOVA, N. G., TSONEVA, R. A., and DZHIMBIZOVA, D., Superior Chemical and Technological In-titute of Bulgaria, Sofiya

"Polarographic Study of the Arsenic (III) - Ascorbic Acid System"

Moscow, Zhurnal Neorganicheskoy Khimii, Vol 17, Vyp 3, 1972, pp 681-685

Abstract: Ascorbic acid (H_2L) forms complexes with a series of metal ions. Because As(III) forms a polarographically active complex with H_2L, it is necessary to analyze for H_2L only in a buffered solution. As(III) was determined by polarography during the reduction of Se^{+4} to Se^0. The composition of the H_2L complex with As(III) has the form $As(OH)_2HL$. The linearity and slope (the latter approximately one) of the pH vs log α (where $\alpha = \frac{[AsL]}{c'_{As} c'_L}$, the apparent dissociation constant) plot indicate that only one complex was formed. The stability constant β was determined from the equation $H_2L + As(OH)_3 \rightleftarrows As(OH)_2H_mL + (2-m)H^+ + OH^-$ and values of log β are numerically equal to 18.84 ± 0.11 and 18.63 ± 0.53.

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002200720015-2

1/2 028 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--SPECTRUM OF THE STAR AG DRACONIS IN THE VISIBLE RANGE -U-

AUTHOR-(02)-DOLIDZE, M.V., DZHIMSHELEISHVILI, G.N.

COUNTRY OF INFO--USSR

SOURCE--AKADEMIIA NAUK GRUZINSKOI SSR, SOOBSHCHENIIA, VOL. 58, APR. 1970, P. 57-60
DATE PUBLISHED----APR70

SUBJECT AREAS--ASTRONOMY,ASTROPHYSICS, METHODS AND EQUIPMENT

TOPIC TAGS--SPECTRUM, ASTRONOMIC CAMERA, ASTRONOMIC OBSERVATORY, SPECTRAL ENERGY DISTRIBUTION, STAR

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY FICHE NO----FD70/605011/F04 STEP NO--UR/0251/70/058/000/0057/0060

CIRC ACCESSION NO--AP0140226

UNCLASSIFIED

APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002200720015-2"

"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002200720015-2

2/2 028 UNCLASSIFIED PROCESSING DATE--04DEC70
CIRC ACCESSION NO--AP0140226
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. INVESTIGATION OF THE VISIBLE REGION OF THE SPECTRUM OF AG DRA ON THE BASIS OF 9 SPECTRA OBTAINED WITH A MENISCUS PRISMATIC CAMERA AT THE ABASTUMAN OBSERVATORY IN 1966 AND 1969. THE PROCESSED DATA PERMIT SOME CONCLUSIONS CONCERNING THE CHARACTERISTIC FEATURES OF THE ENERGY DISTRIBUTION IN THE CONTINUOUS SPECTRUM OF AG DRA. IN THE VISIBLE REGION, THE ENERGY DISTRIBUTION IS SIMILAR TO, BUT NOT COMPLETELY IDENTIFIABLE WITH, THE SPECTRUM OF THE STAR K3III; NOR IS THERE ANY OTHER ANALOG STAR, WHICH MAKES AG DRA UNIQUE IN THIS SENSE. THE DEVIATION IN THE ENERGY DISTRIBUTION INCREASES IN THE BLUE AND VIOLET. FACILITY: ABASTUMANSKAIA ASTROFIZICHESKAIA OBSERVATORIIA, MOUNT KANOBILI, GEORGIAN SSR.

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002200720015-2

1/2 011 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--CALCULATION OF RETENTION VALUES IN GAS CHROMATOGRAPHY. III. CHLORINATED HYDROCARBONS -U-

AUTHOR-(03)-SAKHAROV, V.M., VOSKOV, V.S., DZHIOYEVA, Z.K.

COUNTRY OF INFO--USSR

SOURCE--ZH. FIZ. KHIM. 1970, 44(1), 183-6

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, METHODS AND EQUIPMENT

TOPIC TAGS--GAS CHROMATOGRAPHY, CHLORINATED ORGANIC COMPOUND, CHROMATOGRAPHIC ANALYSIS, ISOMER, STEREOCHEMISTRY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/2145 STEP NO--UR/0076/70/044/001/0183/0186

CIRC ACCESSION NO--AP0125728

UNCLASSIFIED

APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002200720015-2"

"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002200720015-2

2/2 011 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0125728

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. RETENTION VALUES (R SUBV) AND THE B.P. OF ISOMERIC CHLOROORG. COMPDS. DEPEND ON THE ENERGIES GIVEN BY THE STERIC EFFECTS IN THE MOLS. OF THESE COMPDS. THE INTERACTION ENERGIES OF NONBOUND ATOMS CAN BE ESTD. IF THE NO. OF INTERACTING PAIRS OF GEMINAL H AND CL ATOMS (H-H) SUBI AND (C-CL) SUBI IS KNOWN. TABLES GIVE THE NO. (H-H) SUBI, (H-CL) SUBI, R SUBV, AND B.P. FOR 26 MONO, DI, TRI, AND TETRACHLORO SUBSTITUTED SATD. AND UNSATD. HYDROCARBONS.

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D

Functional Analysis

USSR

UDC 518:517.9[m]/.97

DZHISHKARIANI, A. V.

"Remarks on Direct Methods"

Tr. Tbilissk. Matem. In-ta. AN GruzSSR (Transactions of the Tbilisi Mathematical Institute, Georgian SSR Academy of Sciences), 1970, Vol 36, pp 47-56 (from RZh-Matematika, No 9, Sep 1970, Abstract No 9B611, by I. Shelikhova)

Translation: Two theorems dealing with the A-completeness of a system of coordinate functions that is used in investigating the method of least squares are proven. Conditions of completeness are derived in separable Hilbert space H of a system of functions $A\varphi_1$, $A\varphi_2$, . . . , when given the orthomorphic system -- complete in H -- of functions φ_1, φ_2, . . . belonging to the region of determination of the positive-determinate, self-conjugating operator A determined on the lineal D(A) and with a discrete spectrum. Generalization of

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002200720015-2

USSR

DZHISHKARIANI, A. V., Tr. Tbilissk. Matem. In-ta. AN GruzSSR, 1970, Vol 36, pp 47-56

the fact of convergence to zero of the error when solving, using the Ritz method, the equation Au = f is proven if eigenfunctions of the convergent operator are taken as coordinate functions and if evaluations of the error in metrics of the space H and the energy space of the operator A are derived. A new proof is given for a necessary and sufficient condition of convergence of the error of the Ritz method to zero. A condition of convergence to zero for the error of the Bubnov-Galerkin method and an error evaluation method are obtained and an error evaluation is made. The stability of a generalized Bubnov-Galerkin method is shown. Bibliography: 13 entries.

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002200720015-2

USSR

DZHITENOV, A. K., KULIKOV, G. V.

"Recommended Values of Deformation Modulus as a Function of Moisture Content and Porosity Factor"

Tr. Turkm. Politekhn. In-ta [Works of Turkmen Polytechnical Institute], No 9, 1971, pp 82-90, (Translated from Referativnyy Zhurnal, Mekhanika, No 4, 1972, Abstract No 4 V719 by K. V. Nikolayev).

Translation: Tables and graphs of the change in modulus of deformation of soils as a function of porosity factor and moisture content are presented. The data are produced using laboratory compression testing and field tests with loading by a circular stamp 79.5 cm in diameter. The compressive stresses during testing were from 1 to 3-4 kg/cm^2. As porosity and moisture content increased, the values of modulus decreased. Field test data for the range of change of porosity factor studied (0.6-1.0) and moisture content (0.2-0.85) are presented in a Table of values of modulus of deformation recommended for use in designing structures.

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002200720015-2

USSR

UDC 576.858.25.095.18

DZHIVANYAN, T. I., CHUPRINSKAYA, M. V., and LASHKEVICH, V. A., Institute of Poliomyelitis and Viral Encephalitis, Academy of Medical Sciences USSR, Moscow

"On Factors Affecting Manifestation of the DS-Index in Viruses of the Tick-Borne Encephalitis Complex"

Moscow, Voprosy Virusologii, No 1, 1973, pp 86-91

Abstract: Differences in plaque formation in response to DS (dextran sulfate) were studied in cultures of the Khipr, Absettarov (western strains), Khabarovskiy-17, Khabarovskiy-9, and Sof'in strains, and strain TP-21 (Langat virus) (eastern strains), all of the tick-borne encephalitis complex. Viruses were cultured in SPEV-44 and chick embryo cells with varying quantities of $NaHCO_3$ and normal calf serum in the presence or absence of chick embryo extract. DS either had no effect or reduced plaque size to varying degrees depending on the type of virus and culturing conditions. Addition of chick embryo extract to DS-treated cultures reduced plaque size further. By this method it was possible to differentiate western from eastern strains and strain TP-21 (Langat virus) from all other strains in SPEV-44 cell cultures. The ways in which culturing factors affect DS sensitivity remain unknown.

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002200720015-2

USSR UDC 576.858.25.095.18:547.458.122

DZHIVANYAN, T. I., and LASHKEVICH, V. A., Institute of Poliomyelitis and Viral Encephalitis, Academy of Medical Sciences USSR

"The Effect of Sulfopolysaccharides on Plaque Formation by Tickborne Encephalitis Viruses of Different Degrees of Neurovirulence"

Moscow, Voprosy Virusologii, No 4, Jul/Aug 70, pp 395-399

Abstract: It was determined that addition of dextran sulfate (25 to 800 micro g per ml of agar to a chick embryo tissue culture with 0.22 to 0.3% $NaHCO_3$ does not suppress plaque formation by the virulent Absettarov strain, whereas under the same conditions the less virulent Langat virus (TP-21 strain) produces 1.5 to 2.1 g fewer plaques than under an agar layer containing diethylaminoethyl dextran or under an agar layer without polions such as DEAED. The sensitivity to dextran sulfate may serve as a new genetic marker for viruses of the tickborne encephalitis virus complex. Under an agar layer containing dextran sulfate and a low concentration of $NaHCO_3$ (0.07%), neither strain formed plaques.

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002200720015-2

USSR

UDC 543.8

SHEYNINA, R. I., DZHIYANBAYEVA, R. Kh., KHALIMOVA, U. Kh., TALIPOV, Sh. T., and IBRAIMOV, Ch. I., Tashkent State University imeni V. I. Lenin and the Middle Asia Branch of the All-Union Scientific Research Institute of Fats, Tashkent

"Kinetic Method for Determining Microgram Quantities of the Organophosphorus Compound Butifos"

Moscow, Zhurnal Analiticheskoy Khimii, Vol 27, Vyp 8, 1972, pp 1643-1647

Abstract: Microgram quantities of butifos can be determined from its catalytic properties on the oxidation of benzidine, o-dimethoxybenzidine, and dimethylbenzidine by H_2O_2. The reaction is following photometrically. The dimethylbenzidine reaction is the most sensitive of the indicators as the methyl groups are stronger electron donors than the methoxy group. Conditions optimizing the reaction are examined. Trace amounts of butifos in the fibers and husks of cotton seeds were determined by this method.

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002200720015-2

USSR

UDC 632.95

SHEYNINA, R. I., TALIPOV, SH. T., DZHIYANBAYEVA, R. KH, KHALIMOVA, U. KH.

"Methods of Analyzing Microgram Amounts of Butyphos in Some Products of Industrial Processing of Cotton"

Tr. 2-go Vses. sovesnch. po issled. ostatkov pestitsidov i profilakt. zagryaz-neniya imi produktov pitaniya, kormov i vnesh. sredy (Works of the Second All-Union Conference on the Investigation of Pesticide Residues and Preventive Contamination of Food Products, Feeds and Environment), Tallin, 1971, pp 376-380 (from RZh-Khimiya, No 12, Jun 72, Abstract No 12N500)

Translation: For analysis of butyphos (I) in raw cotton and cotton fiber, the property of I to accelerate the oxidation of o-dianisidine by H_2O_2 and retard the oxidation of hydroquinone by H_2O_2 in the presence of Cu^{2+} is used. The concentration of I in the 1.25-6.25 $\cdot 10^{-2}$ $\gamma/m\ell$ range is determined by measuring the rate of one reaction, and the concentration of I to 10^{-4} $\gamma/m\ell$ by measuring the rate of the second reaction. The reaction rate is determined by the fixed time method, measuring the optical density of these solutions 20 minutes after mixing the solutions in the first case and 5 minutes after in the second case.

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002200720015-2

USSR

UDC 632.95

DZHIYANBAYEVA, R. KH., TALIPOV, SH. T., KHALIMOVA, U. KH., and BELGORODOVA, N. F.

"Qualitative and Quantitative Measurement of Magnesium Chlorate in Cottonseed Oil"

Tr. 2-go Vses. soveshch. po issled. ostatkov pestitsidov i profilakt. zagryaznеniya ini produktov pitaniya, kormov i vnesh. sredy (Works of the Second All-Union Conference on the Study of Pesticide Residues, and the Prevention of Contamination by Them of Food Products, Fodders and the Environment), Tallinn, 1971, p 280 (from Referativnyy Zhurnal -- Khimiya, No 10 (II), 1972, Abstract No 10H584 by T. A. Belyayeva)

Translation: The cotton plant defoliant $Mg(ClO_3)_2$ (I) is extracted from cotton seed oil with 0.05 N HCl and the extract is passed through anion exchange AB-17 (in OH form) and washed with 2N H_2SO_4. I is determined in in an eluant photometrically with benzidine hydrochloride. Sensitivity of the measurement is 0.05-1 mg/kg.

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002200720015-2

1/2 018 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--SPECTROPHOTOMETRIC DETERMINATION OF IONIZATION CONSTANTS OF 6 PRIME,,,2,7,DIHYDROXY,1,NAPHTHYL,AZO,1, METHYLANABASINE -U-
AUTHOR-(03)-SMAGLYUK, N.G., DZHIYANBAYEVA, R.KH., TALIPOV, SH.T.

COUNTRY OF INFO--USSR

SOURCE--UZB. KHIM. ZH. 1970, 14(2), 24-8

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--SPECTROPHOTOMETRIC ANALYSIS, IONIZATION, HYDROXYL RADICAL, NAPHTHALENE, AZO COMPOUND, HETEROCYCLIC NITROGEN COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3008/0926 STEP NO--UR/0291/70/014/002/0024/0028

CIRC ACCESSION NO--AP0137954
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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002200720015-2

2/2 018 UNCLASSIFIED PROCESSING DATE--04DEC70
CIRC ACCESSION NO--AP0137954
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DISSOCN. CONSTS. OF THE TITLE COMPD. (I) WERE DETD. AT 18DEGREES BY 3 METHODS. ABSORPTION SPECTRA (400-600 NM) OF 0.002M ETOH SOLN.S OF I AT PH 0.82-9.81 WERE MEASURED. ABSORPTION CURVES FORM 3 ISOSBESTIC POINTS. THE 1ST AT 450 MM DEPENDS ON THE SPLITTING OFF OF THE PROTON FROM N OF THE PYRIDINE RING. AT PH SMALLER THAN 0.82 (ABSORPTION MAX. LAMBDA SUBMAX. 420 NM), PH LARGER THAN 2.7 (LAMDBA SUBMAX. 460 NM), AND PH 1-2.2, PROTONATED MOLS., NEUTRAL MOLS., AND A MIXT. OF BOTH OF THESE I MOL. TYPES ARE PRESENT IN THE SOLN., RESP. AN ISOSBESTIC POKNT AT 495 NM CORRESPONDS TO PROTON ELIMINATION FROM THE OH GROUP OF I NEPHTHALENE RING, NEARER TO THE AZO GROUP. AT PH 2.5-5 (LAMBDA SUBMAX. 460 NM), THE I MOLS., ARE IN A NONDISSOCD. (H SUB2 A) STATE, AT PH 5.5-8 A MIXT. OF H SUB2 A AND I MOLS. DISSOCD. TO THE 1ST STAGE (HA PRIME NEGATIVE) IS PRESENT, AND AT PH 8.3 LAMBDA SUBMAX. 470 NM), THE 1ST DISSOCN. STAGE OF I IS FINISHED. AN ISOSBESTIC POINT AT 440 NM IS CAUSED BY REMOVING PROTON FROM THE 2ND OH GROUP OF THE NAPHTHALENE RING. AT PH 8.6-9.8, A MIXT. OF HA PRIME NEGATIVE AND A PRIME2 NEGATIVE IONS EXISTS IN THE SOLN. THE 2ND DISSOCN. STAGE OF I IS COMPLETED AT PHLARGER THAN 10 (LAMBDA SUBMAX. 480 NM) BY THE FORMATION OF A PRIME2 NEGATIVE. THE MEAN PK VALUES OF I ARE 1.69, 7.88, AND 8.88. FACILITY: TASHKENT. GOSUNIV. IM. LENINA, TASHKENT, USSR.

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USSR

UDC 632.95

TALIPOV, Sh. T., DZHIYANBAYEVA, R. Kh., KHALIMOVA, U. Kh., BELOBORODOVA, N. F., SHEYNINA, R. I.

"Analysis of Butyphos in Cotton Seed and Products of Refining Raw Cotton"

Maslo-zhir. prom-st' (Oil and Fats Industry), 1972, No 10, pp 33-34 (from RZh-Khimiya, No 2 (II), Feb 73, Abstract No 2N478)

Translation: In order to determine the butyphos residue in raw cotton, fiber, shells and the refined cotton seed oil, extraction by an organic solvent (for cotton seed oil, MeCN and for the other samples, CCl_4) and purification of the extract in a column filled with Al_2O_3 with SG KSK [expansion unknown] (3:1) [the sorbent was first treated with HCl (acid)] were carried out. Thin layer chromatography was performed using a fixed layer of SG in the n-hexane-acetone system (4:1). It was developed with a solution of Ac-OH. The sensitivity of the method when analyzing butyphos in raw cotton and fiber is 0.1 mg/kg; in the hulls it is 0.6 mg/kg and in the refined cotton seed oil, 1 mg/kg.

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002200720015-2

USSR

UDC 535.36

BERIDZE, D. K., DZHOBAVA, G. R.

"Investigating Multiple Scattering of Light"

Leningrad, Optika i Spektroskopiya, Vol 31, No 5, 1971, pp 788-795

Abstract: This article is the continuation of an earlier paper by the same authors in the same journal (28, 1970, p 504). The earlier paper represented research into the scattering of light in polystyrol latexes, in which data was obtained on the dependence of the multiple dispersed light intensity on the depth of the dispersing medium. The present article discusses the results of the experiments described in the first, which showed that if a parallel beam of light is normally incident on the base of a cylinder made of the dispersing material, the intensity of the scattered light dies away exponentially as a function of the depth. In the present article, the physical significance of one of the factors in the exponent, the attenuation factor of the repeatedly scattered light, is examined. A method is also proposed for the separate determination of σ and α, the coefficients of light scattering and absorption respectively, which requires no new equipment except for a modification of the ordinary spectrophotometer.

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002200720015-2

1/2 023 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--MULTIPLE LIGHT SCATTERING. I -U-

AUTHOR-(02)-DZHOBAVA, G.R., BERIDZE, O.K.

COUNTRY OF INFO--USSR

SOURCE--OPT. SPEKTROSK. 1970, 28(3),504-12

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS, MATERIALS

TOPIC TAGS--LIGHT SCATTERING, MULTIPLE SCATTERING, POLYSTYRENE RESIN, OPTIC MEASUREMENT, LATEX

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1996/1434 STEP NO--UR/0051/70/028/003/0504/0512

CIRC ACCESSION NO--AP0118423

UNCLASSIFIED

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002200720015-2

2/2 023 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0118423

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. LIGHT SCATTERING IN POLYSTYRENE LATEXES OF A BROAD RANGE OF CONCNS. AND THE RELATION BETWEEN THE LIGHT SCATTERING INTENSITY AND THE SCATTERING MEDIUM DEPTH WERE STUDIED. THE LENGTHWISE AXIS OF THE CYLINDRICAL SCATTERING MEDIUM DIFFUSED THE EXCITING LIGHT (SCATTERING ANGLE 90DEGREES). THE COEFF. OF WEAKENING OF THE MULTIPLY SCATTERED LIGHT, THE SCATTERING COEFF., THE CUVETTE DIAM. WERE INTERRELATED. A NEW METHOD, ALLOWING SCATTERING OCEFF. MEASUREMENTS AT 2-50 CM PRIME NEGATIVE1, IS PROPOSED FOR DETG. THE SCATTERING COEFFS. OF HIGHLY SCATTERING MEDIA.

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002200720015-2

USSR

UDC: 551.511

GISINA, F. A., DZHOLOV, G. D., LAYKHTMAN, D. L.

"Distribution of the Concentration of an Impurity Entering the Atmosphere From a High-Altitude Continuous Point Source"

Tr. In-t eksperim. meteorol. Gl. upr. gidrometeorol. sluzhby pri Sov. Min. SSSR (Works. Institute of Experimental Meteorology. Main Administration of the Hydrometeorological Service Affiliated With the Council of Ministers of the USSR), 1972, vyp. 27, pp 70-76 (from RZh-Mekhanika, No 7, Jul 72, Abstract No 7B988)

Translation: Taking the numerical solution of the two-dimensional equation of turbulent diffusion as a basis, the authors find the distribution of an impurity $S(x,z)$ entering the atmosphere from a continuous high-altitude point source (the x-axis is parallel to the wind, the z-axis is directed vertically upward). The function $S(x,z)$ is related to the volumetric concentration $q(x,y,z)$ by the expression

$$q(x, y, z) = \frac{e^{-y^2/2\sigma_y^2}}{\left(2\pi\sigma_y^2\right)^{1/2}} S(x, z)$$

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002200720015-2

USSR
GISINA, F. A. et al., Tr. In-t eksperim. meteorol. Gl. upr. gidrometeorol. sluzhby pri Sov. Min. SSSR, 1972, vyp. 27, pp 70-76

where σ_y^2 is the dispersion of the particles of impurity in the direction of the y-axis.

In determining $S(x,z)$ use was made of the wind speed profiles and the coefficient of turbulence found by Bobyleva, Zilitinkevich and Laykhtman from a closed system of equations for the boundary layer. The external parameters of the problem are the Rossby number $R = G/\lambda z_0$, and the stratification parameter

$$\mu = -\varkappa^2 \frac{g}{T} \frac{P/C_p\rho}{\lambda V_*^2}$$

where G is the geostrophic wind, $\lambda = 2\omega \sin\phi$ is the Coriolis parameter, z_0 is the roughness parameter, V_* is the dynamic velocity, P is the turbulent heat flux and the remaining notation is conventional.

The calculation was done on a computer. A study was made of the effect of external parameters and physicochemical characteristics on impurity distribution. Some results of the numerical solution are given. Authors' abstract.

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002200720015-2

1/2 018 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--INITIATED DECARBOXYLATION OF MERCURIC VALERATE, CAPROATE, AND CAPRATE. SYNTHESIS OF N BUTYL, N AMYL, AND N NONYLMERCURY COMPOUNDS -U-
AUTHOR-(04)-OLDEKOP, YU.A., MAYER, N.A., ERDMAN, A.A., DZHOMIDAVA, YU.A.

COUNTRY OF INFO--USSR

SOURCE--ZH. OBSHCH. KHIM. 1970, 40(3), 637-41

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--DECARBOXYLATION, ORGANOMERCURY COMPOUND, UV LIGHT, ORGANIC PEROXIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3006/1472 STEP NO--UR/0079/70/040/003/0637/0641

CIRC ACCESSION NO--AP0135142

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002200720015-2

2/2 018 UNCLASSIFIED PROCESSING DATE--04DEC70
CIRC ACCESSION NO--AP0135142
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. HG(II) VALERATE (I) CAPROATE (II), AND CAPRATE (III), ARE DECARBOXYLATED BY UV LIGHT OR ACYL PEROXIDES TO FORM SALTS OF ALKYL MERCURY IN GOOD YIELDS. (I), M. 96DEGREES (II), M. 104DEGREES, (II), M. 112-13DEGREES. HEATING 10G I WITH 10 G VALEROYL PEROXIDE AND 200 G BUCO SUB2 H AT 97-8DEGREES UNTIL GAS EVOLUTION CEASED (1 HR) GAVE MAINLY CO SUB2, TRACES OF BUTENES, AND SOME C SUB4 H SUB10 IN THE EFFLUENT GASES; THE RESIDUE GAVE 75.1PERCENT BUHG SALTS, 12.3PERCENT HG PRIME POSITIVE, 12.6PERCENT HG PRIME2 POSITIVE. TO HG 5 AND BUCO SUB2 H 100 WAS ADDED HNO SUB3 0.8 AND, OVER 15 MIN 30PERCENT H SUB2 O SUB2 12 MILLIMOLES, THE MIXT. STIRRED 0.5 HR AT ROOM TEMP. AND 0.5 HR AT 85DEGREES, TO FORM A CLEAR SOLN. FREE OF HG OR HG(I) SALTS, AND CONCD. TO GIVE 99.5PERCENT I. SUCH A SOLN. AFTER REMOVAL OF MOST OF THE SOLVENT WAS TREATED WITH 1.5 MILLIMOLES DRY NA VALERATE AND 42 MILLIMOLES VALERIC ANHYDRIDE, COOLED TO MINUS 5DEGREES AND TREATED WITH 12 MILLIMOLES 60PERCENT H SUB2 O SUB2, KEPT 40 MIN, RAPIDLY HEATED TO 98DEGREES, KEPT 1 HR DURING GAS EVOLUTION, FILTERED TO REMOVE 0.05 G HG, AND CONCD. TO YIELD, AFTER ADDN. OF KCL, 92.8PERCENT BUHGCL; ACIDIFICATION OF THE FILTRATE GAVE ON TREATMENT WITH H SUB2 S 0.02 G HGS. SIMILAR REACTIONS WITH SOLN. OF II, USING CAPROIC ACID DERIVS., GAVE 94.4PERCENT N C SUB5 H SUB11 HGCL. SIMILARLY WAS PREPD. A SOLN. OF BUTYLMERCURY VALERATE, WHICH WAS CONCD., TAKEN UP IN ACOH AND H SUB2 O, AND TREATED WITH 25PERCENT NH SUB4 OH AND H SUB2 S TO YIELD 75PERCENT BU SUB2 HG; SIMILARLY WAS PREPD. 69PERCENT (N C SUB5 H SUB11)SUB2 HG.
FACILITY: INST. FIZ. ORG. KHIM., MINSK, USSR.

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1/2 . 015 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--DECARBOXYLATION OF MERCURIC BUTYRATE AND THE INFLUENCE OF PEROXIDES. SYNTHESIS OF PROPYLMERCURY COMPOUNDS -U-

AUTHOR-(04)-OLDEKOP, YU.A., MAYER, N.A., ERDMAN, A.A., OZHOMIDAYA, YU.A.

COUNTRY OF INFO--USSR

SOURCE--ZH. OBSHCH. KHIM. 1970, 40(2) 300-5

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--DECARBOXYLATION, ORGANOMERCURY COMPOUND, PEROXIDE, CHEMICAL SYNTHESIS, CHAIN REACTION, ACETATE, PROPIONATE, BENZOYL PEROXIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1985/1409 STEP NO--UR/0079/70/040/002/0300/0305

CIRC ACCESSION NO--AP0101499

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2/2 - 015 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0101499

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE RESULTING PRODUCTS FORM REACTION OF MERCURIC BUTYRATE (I) WITH BZ SUB2 O SUB2 AND (PRCO SUB2) SUB2 IN C SUB6 H SUB6, PRCO SUB2 H AND MECN WERE TABULATED UNDER A VARIETY OF CONDITIONS AND REACTANT RATIOS. THE MAJOR PRODUCTS WERE THE APPROPRIATE PROPYLMERCURY SALTS (II), FOLLOWED IN ORDER BY PHENYLMERCURY SALTS, MERCURIC SALTS, CO SUB2, AND SMALL AMTS. CO, C SUB3 H SUB6, C SUB3 H SUB8, AND LITTLE IF AN HG. IN ALL CASES I IS DECARBOXYLATED TO FORM UP TO 92PERCENT II; IN PRCO SUB2 H AND C SUB6 H SUB6 THE REACTION HAS A CHAIN MECHANISM. FOR SYNTHESIS OF I THE SCHEME DEVELOPED WAS SIMILAR TO THAT USED EARLIER FOR THE ACETATE AND THE PROPIONATE (O. ET AL., 1969). SIMILAR REACTION OF 40 HG, 400 PRCO SUB2 H, 3 HNO SUB3 AND 60 MILLIMOLES H SUB2 O SUB2 IN THE 1ST STEP, FOLLOWED BY 500 (PRCO SUB2) SUB2, 80 H SUB2 O SUB2 AND 6 MILLIMOLES PRCO SUB2 NA IN THE 2ND STEP, EVAPN. OF THE SOLVENT, ADDN. OF 30 ML ACOH AND 500 ML H SUB2 O, NEUTRALIZATION WITH NH SUB4 OH, AND SATN. WITH H SUB2 S GAVE 86PERCENT PRHGS, WHICH HEATED AT 130 TO 80DEGREES GAVE 69.8PERCENT PR SUB2 HG, B SUB13 78 TO 80DEGREES.

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USSR

UDC: 669.295 (1)

VYATKIN, I. P., ZIMIN, V. M., KUNGINA, N. I., MUSHKOV, S. V., and DZHONS, M. M.

"Lining Smelting of Briquetted Titanium Sponge"

Moscow, Tsvetnyye Metally, No 10, Oct 73, pp 41-42

Abstract: The authors study the possibility of using pressed titanium briquets without presmelting as consumable electrodes. This involved the selection of the optimal technological parameters which would ensure smelting stability. The solution of this problem would make shaped casting inexpensive. The smelting was conducted in a lined vacuum arc furnace designed by VIAM (All-Union Scientific Research Institute of Aviation Materials). The TG-100, TG-120, and TG-ChM grades of titanium sponge were used as the charging material. The sponge was pressed in the B-654 briquet press at 630 tons into briquets of 140 and 160 mm in diameter and 120 mm high. In all more than 50 smelts were conducted. It was shown that sponge quality during the smelting of briquets made from the TG-100, TG-120, and TG-4M grades did not affect smelting. The visually observable gas generation was practically the same or significantly greater than during the smelting of monolithic electrodes. An attempt to reduce gas generation by smelting in a helium atmosphere proved unsuccessful. The pressed electrodes also need more heat than the monolithic electrodes since their thermal conductivity and density are lower. It was also shown that the use of large diameter electrodes is more advantageous. During test-

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VYATKIN, I. P., et al, Tsvetnyye Metally, No 10, Oct 73, pp 41-42

ing the obtained liquid metal was poured into forms, producing either ingots or shaped parts. Specimens were cut from these and their chemical composition and mechanical properties determined. The corrosion resistance of these specimens was determined using standard methodology in HCl gas and acid media. The corrosion rate was quite high during the first 800 hours and reached maximum at 150-200 hours. Specimens made from TG-ChM corrode more than specimens made from TG-100. As the test duration is increased, the difference in the rate of corrosion diminishes and becomes identical.

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Acc. Nr.: A/0042568

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Ref. Code: UR0293

JPRS 50162

Measurement of Low-Energy Electrons

(Abstract: "Measurement of Low-Energy Electrons," by Yu. I. Gal'perin, N. V. Dzhordzhio, I. D. Ivanov, I. P. Karpinskiy, E. L. Lein, T. M. Mulyarchik, B. V. Polenov, V. V. Temnyy, N. I. Fedorova, B. I. Khazanov, A. V. Shifrin and F. K. Shuyskaya; Moscow, Kosmicheskiye Issledovaniya, Vol VIII, No 1, 1970, pp 108-119)

[Note: This is part of a sectionalized article "Study of Geoactive Corpuscles and Photoelectrons on the Satellite 'Kosmos-261'," Kosmicheskiye Issledovaniya, Vol VIII, No 1, 1970, pp 104-136]

A spectrometer for low-energy electrons, operating in the energy range 30 eV-15 keV, is described. Electrons undergo energy selection in a cylindrical capacitor and then are accelerated to 17 keV and are registered by a scintillation counter with two photomultipliers operating in a coincidence circuit. The instrument field of view is circular, the aperture angle is $\pm 3.5°$, the geometry factor is $2 \cdot 10^{-3}$ cm^2·sterad and the energy resolution is $\Delta E/E = 0.19$. In the first range (30-150 eV) energy scanning is done smoothly by applying a sawtooth voltage; in the second analysis it is done smoothly at three fixed energies -- 1, 4.5 and 15 keV. The instrument can be switched from one regime to another by command from

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the earth. The paper gives the first results of measurements on the "Kosmos-261" satellite. The instruments measured the equilibrium energy spectrum of fresh photoelectrons at different latitudes for different pitch angles. Soft auroral electrons with energies from 30 eV to approximately 1 keV were registered both in the "second" zone of auroras and in the main zone of auroras in which electrons with energies 4.5 and 15 keV were also very intensive even during magnetically quiet times. On many revolutions of the satellite about the earth, passing approximately along the auroral oval, with transition from the midnight to the morning sectors there is a structureless "background" of electrons with an almost constant intensity and slowly changing angular distribution. The energy flux of these electrons is approximately 1 erg/cm^2·sec. Near the midnight sector and with transition from the midnight to evening sector the fluxes of auroral electrons are far more irregular, with strong peaks, particularly at about 4.5 keV. No measureable electron intensities were discovered in the middle and low latitudes in the keV range. The upper limit of the energy flux in the quiet atmosphere is approximately $<1.5\cdot10^{-2}$ erg/cm^2·sec. An exception is the equatorial region of the ionospheric anomaly, where as earlier (on the "Kosmos-5" satellite) there was sporadic registry of soft electrons.

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N. V. DZHORDZHIO

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Acc. Nr.: AP0042570

Ref. Code: UR0293

JPRS 50162

Study of Geoactive Corpuscles and Photoelectrons

(Abstract: "Study of Geoactive Corpuscles and Photoelectrons on the 'Kosmos-261' Satellite," by A. D. Bolyunova, M. L. Bragin, Yu. I. Gul'perin, V. A. Gladyshev, N. V. Dzhordzhio, G. N. Zlotin, I. N. Kiknadze, R. A. Kovrazhkin, T. M. Mulyarchik, Yu. N. Ponomarev, V. V. Temnyy, N. I. Fedorova, Yu. P. Shilyayev, F. K. Shuyskaya and R. V. Shulenina; Moscow, Kosmicheskiye Issledovaniya, Vol VIII, No 1, 1970, pp 104-136)

The artificial earth satellite "Kosmos-261" was used in a study of low-energy geoactive corpuscles and fresh photoelectrons and their interaction with the earth's upper atmosphere. The satellite was launched on 30 December 1968. Orbital inclination to the equator was 71°, so that for a relatively long time it moved almost along a tangent along the auroral zone over the Soviet Far North, making it possible to increase the volume of simultaneous measurements from the satellite and from ground observatories. The storage regime made it possible to extend continuous measurements for periods of several revolutions, including passes over the auroral zones in the Arctic and Antarctic and over the polar caps as far as invariant geomagnetic latitudes 82-85°. During the initial period the satellite apogee was at 670 km and perigee was at 217 km, but it finally

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burnt up upon entering into the dense layers of the atmosphere on 12 February 1969 after making 857 revolutions of the earth. The experiment lasted 53 days. The orbit was such that in the northern hemisphere middle and high latitudes the satellite moved below or close to the maximum of the Foregion so that ionospheric electron density along its trajectory and its variations could be determined in a number of regions on the basis of measurements by ground ionospheric stations. The period of the experiment included both quiet periods and those with strong disturbances. The experiment was conducted under the "Program of Cooperation Among Socialist Countries in the Field of Space Research and Peaceful Use of Space." Ground measurements were made in Bulgaria, Hungary, East Germany, Poland, Rumania, USSR and Czechoslovakia. Observatories and special expeditionary stations in the USSR participated: in Yakutia, the Far North, Siberia and middle latitudes. The article cited below is divided into four parts: 1) Description of Experiment; 2) Measurement of Low-Energy Electrons; 3) Measurement of Low -Energy Ions; 4) Measurements of Charged Particles with Intermediate and High Energies. Parts 2)-4) are essentially independent articles and are abstracted separately.

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002200720015-2

1/2 027 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--ANISOTROPY OF PARAMAGNETIC Y CENTERS IN LITHIUM FLUORIDE CRYSTALS -U-

AUTHOR-(05)-DAVITASHVILI, T.SH., DZHORDZHISHVILI, L.I., KALABEGISHVILI, T.L., POLITOV, N.G., SOBOLEVSKAYA, S.V.

COUNTRY OF INFO--USSR

SOURCE--FIZ. TVERD. TELA 1970, 12(1), 289-91

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS, PHYSICS

TOPIC TAGS--ANISOTROPY, LITHIUM FLUORIDE, OPTIC PROPERTY, LIGHT ABSORPTION, SINGLE CRYSTAL, PARAMAGNETIC MATERIAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1984/0222 STEP NO--UR/0181/70/012/001/0289/0291

CIRC ACCESSION NO--AP0055018

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2/2 027 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0055018

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EPR SPECTRA WERE INVESTIGATED OF SINGLE CRYSTALS OF LIF AFTER IRRADN. WITH A PRIME60 CO SOURCE IN A REACTOR WITH EMPHASIS ON THE Y LINE, APPEARING AFTER NONISOTHERMAL ANNEALING OF IRRADIATED CRYSTALS. OPTICAL ABSORPTION SPECTRA WERE ALSO RECORDED BEFORE AND AFTER ANNEALING. IN GAMMA IRRADIATED NONANNEALED CRYSTALS F AND M ABSORPTION BANDS WERE OBSD. AFTER NONISOTHERMAL ANNEALING OF THESE CRYSTALS, A WEAK F BAND REMAINED IN THE OPTICAL ABSORPTION SPECTRUM AND ONLY A Y LINE IN THE EPR SPECTRUM. DEPENDENCES WERE MEASURED OF THE WIDTH DELTA H AND G FACTOR ON ORIENTATION OF THE CRYSTAL IN AN EXTERNAL CONST. MAGNETIC FIELD H. WHEN H PARALLEL TO (010) ALL OF THE AXES (111) FORM AN ANGLE OF 54.7DEGREES WITH H, CENTERS OF GRAVITY OF ALL 4 LINES COINCIDE AND DISPLACEMENTS RELATIVE TO THE LINES ARE ABSENT. WHEN H PARALLEL TO (110), 1 PAIR OF THE 4 AXES (111) FORMS WITH H AN ANGLE OF 35.3DEGREES, AND 2ND PAIR AN ANGLE OF 90DEGREES. THE CENTERS OF GRAVITY COINCIDE FOR THE SEP . LINES IN EACH PAIR. WHEN H PARALLEL TO (111), THE REMAINING 3 AXES (111) FORM WITH H AN ANGLE OF 72DEGREES. THE LINES ARE SEPD. INTO 2 GROUPS CONSISTING OF 1 AND 3 LINES, RESP. THE WIDTH AND G FACTOR ARE DETD. BY THE DISPLACEMENTS BETWEEN THE GROUPS OF LINES. IT FOLLOWS THAT Y CENTERS POSSES AN AXIS OF AXIAL SYMMETRY ALONG (111).

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1/2 017 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--GLYCIDYL ETHERS AND EPOXY RESINS -U-

AUTHOR-(02)-DZHOY, A.S., MOSHCHINSKAVA, N.K.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 264,694

REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,

DATE PUBLISHED--03MAR70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--EPOXY RESIN, CHEMICAL PATENT, ETHER, EPICHLORHYDRIN, BENZENE DERIVATIVE, THERMAL STABILITY, HARDNESS, AROMATIC KETONE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1995/1088 STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0116554

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2/2 017 UNCLASSIFIED PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AA0116554

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. GLYCIDYL ETHERS AND EPOXY RESINS WITH INCREASED THERMAL STABILITY AND HARDNESS ARE PREPD. BY CONDENSING EPICHLOROHYDRIN IN AN ALK. MEDIUM WITH 4,(4,HYDROXYPHENYL(PHENYL)METHYLENE),2,5,CYCLOHEXADIEN,1,ONE, M,BIS(4,HYDROXYPHENYL(4,OXO,2,5,CYCLOHEXADIEN,1,YLIDENE), METHYL)BENZENE, P,BIS(4,HYDROXYPHENYL(4,OXO,2,5,CYCLOHEXADIEN, 1,YLIDENE)METHYL)BENZENE, BIS(4,(4,HYDROXYPHENYL(4,OXO,2,5, CYCLOHEXADIEN,1,YLIDENE)METHYL)PHENYL)BIS(HYDROXYPHENYL), METHANE, AND 4,4PRIME,BIS(4,HYDROXYPHENYL(4,OXO,2,5,CYCLOHEXADIEN, 1,YLIDENE)METHYL)BENZOPHENONE. FACILITY: DZERZHINSKII, F. E., CHEMICAL-TECHNOLOGICAL INSTITUTE, DNEPROPETROVSK.

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USSR

UDC 517.5

DZHRBASHYAN, M. M.

"Theory of Factorization and Boundary Properties of Functions Meromorphic in a Circle"

Moscow, Uspekhi Matematicheskikh Nauk, Vol 28, vyp 4(172), Jul-Aug 73, pp 3-14

Abstract: A problem related to the fundamental Nevanlinna theorem on the parametric representation and factorization of a class N of functions F(z) meromorphic in the circle $|z| < 1$ and the fact that the method of proving the theorem rests essentially on the Jensen-Nevanlinna formula is whether there are other more general formulas of the Jensen-Nevanlinna type which would permit the establishment of parametric representation and factorization for classes which are wider or narrower than N. In the 1940's the author made the first attempt towards solving problems of this kind, though the result was far from perfect. In 1964 the author returned to the problem of the factorization of meromorphic functions in an expanded formulation, constructing a general theory of the parametric representation of the classes N_α ($-1 <$

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USSR

DZHRBASHYAN, M. M., Uspekhi Matematicheskikh Nauk, Vol 28, vyp 4(172), Jul-Aug 73, pp 3-14

$\alpha < +\infty$) of functions meromorphic in the circle $|z| < 1$. A fundamental theorem was given on the parametric representation of the classes N_α. However, despite its considerable generality, the theory of factorization of the classes N_α could not be considered definitive, and arose the problem of constructing a complete theory of the factorization of functions meromorphic in the circle $|z| < 1$. Such a theory was constructed by the author in articles that appeared in 1968 and 1969.

The present article, which was a paper delivered at a meeting of the Mathematics Department of the Academy of Sciences USSR on 2 March 1973, summarizes these results and then turns to fundamental theorems of the theory of the factorization of the classes $N(\omega)$. As an example, the article gives results that are fundamentally important for the theory of the classes $N\{\omega\} \subset N$ and their boundary properties.

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002200720015-2

USSR

UDC: 517.5

DZHRBASHYAN, M. M. and KOCHARYAN, G. S., Institute of Mathematics, Yerevan State University

"Uniqueness Theorems for Several Classes of Analytic Functions"

Moscow, Izvevtiya Akademii Nauk SSSR--Seriya Matematicheskaya, No 1, 1973, pp 98-134

Abstract: In an earlier paper of the first of the authors named above (Rasshireniye kvazianaliticheskikh klassov Danzhua-Karlemana -- Broadening the Denjoy-Carleman Quasi-Analytic Classes -- Izv. AN ArmSSR, Matematika, vol 3, No 3(1968), pp 171-248) the concept of alpha quasi-analyticity was introduced. This concept involved Hadamard-Denjoy-Carleman classical quasi-analyticity. The solution to the problem of alpha quasi-analyticity can be solved by reducing it to the Watson problem through the theory of integral transformations of the functions with Mittag-Leiffler kernels, a method also developed by the first of the authors named above (see Dzhrbashyan, M. M., Integral'nyye preobrazovaniya i predstavleniya funktsiy v kompleksnoy oblasti -- Integral Transformations and Representation of Functions in the Complex Region -- "Nauka," Moscow, 1966). In the present paper, further applications of this method of integral transformations are given. Through further generalization of the method, uniqueness theorems for some classes of analytic functions are developed.

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USSR

DZHRBASHYAN, M. M. (Institute of Mathematics, Armenian Academy of Sciences)

"Continuity and Uniqueness of a Dirichlet-Type Series on the Real Axis"

Yerevan, Izvestiya Akademii Nauk Armyanskoy SSR: Matematika, July-August 1972, pp 258-274

Abstract: In the article the author develops a theory on the continuity and uniqueness of the Dirichlet-type series

$$\sum_{j=1}^{\infty} d_j e^{-\lambda_j x} x^{s_j - 1}$$

on the real axis in the L_2 metric. This is done on the assumption that the powers $\{\lambda_j\}_1^\infty$ of this series are arbitrary, complex numbers from the half plane Re $z > 0$ subject only to the condition

$$\sum_{j=1}^{\infty} \frac{\operatorname{Re} \lambda_j}{1+|\lambda_j|^2} < \infty.$$

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USSR

DZHRBASHYAN, M. M., Izvestiya Akademii Nauk Armyanskoy SSR: Matematika, July-August 1972, pp 258-274

The number $s_j \geq 1$ is the multiplicity of the occurrence of the number λ_i in the segment $\{\lambda_1, \ldots, \lambda_i\}$ of the sequence.

It is noted that in the case of the real axis considered in the article the well-known method for a theory of the continuity of ordinary Dirichlet series in strip regions, developed by S. Mandelbroyt ("Continuous Series. Regularization of Sequences. Applications." Publishing House of Foreign Literature; Moscow; 1955), loses its force.

There are 10 bibliographic references.

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002200720015-2

USSR

DZHRBASHYAN, M. M.

"Factorization of Functions Meromorphic in a Finite Plane"

Yerevan Izvestiya Akademii Nauk Armyanskoy SSR, Matematika, No 6, November-December, 1970, pp 453-485

Abstract: This paper contains an investigation of the problem of factorization of functions which are meromorphic in an entire finite plane. With respect to concept and method it is a further application and expansion of the concept and method of the paper by M. M. Dzhrbashyan "Theory of Factorization of Functions Meromorphic in a Circle," Mat. sb. [Mathematics Collection], Vol 79 (121), No 4 (8), 1969, page 517-615, in which the complete theory of factorization of functions meromorphic in a circle was constructed by systematic application of the apparatus of generalized operators of the Riemann-Liouville type $L^{(\omega)}$. A brief review of some of the basic results of the Dzhrbashyan paper is presented as a basis for further discussion. The discussion includes a formula of the Jensen-Nevanlinna type, definition and basic properties of the ω-characteristic of the function $T_{\omega}(R;F)$, and the factorization theorem. The main theorem proved covers meromorphic functions with characteristics of arbitary increase. It is formulated as follows:

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USSR

DZHRBASHYAN, M. M., Izvestiya Academii Nauk Armyanskoy SSSR, Matematika, No 6, June, 1970, pp 453-485

Let $F(z) \in N_\infty\{\omega\}$ and $\{a_\mu\}$ and $\{b_\nu\}$ be the zeros and ones, respectively, of our function, nonzero, and numbered normally.

Then the function F(z) can be represented in the form

$$F(z) = e^{i\alpha} + \lambda x(\omega)\, z^\lambda \exp\left\{\frac{1}{2\pi}\int_0^{2\pi} S_\omega(e^{-i\vartheta}z;\,\omega)\, d\sigma(\vartheta)\right\} \times$$

$$\times \lim \frac{\prod_{0<|a_\mu|<R} A_\omega^{(R)}(z;a_\mu)}{\prod_{0\,|b_\nu|<R} A_\omega^{(R)}(z;b_\nu)}, \quad |z| < \infty,$$

$$\sigma(\theta) = \lim \int_0^\theta \log(\omega)\{|F(Re^{i\vartheta})|\}\, d\vartheta,$$

where the limits are taken for $R \to +\infty$ with respect to some series of values.

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USSR

DZHRBASHYAN, M. M., Izvestiya Academii Nauk Armyanskoy SSSR, Matematika, No 6, June 1970, pp 453-485

Here $\sigma(\theta)$ is a real function with finite, complete variation in $[0, 2\pi]$; λ is the multiplicity of zero (for $\lambda \geq 1$) or one (for $\lambda \leq -1$) at the point $z = 0$; and, finally, $\alpha = \arg \{z^{-\lambda} F(z)\}_{z=0}$.

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Functional Analysis

USSR

UDC: 517.5

DZHRBASHYAN, M.M. and ZAKHARYAN, V.S.

"Boundary Characteristics of Subclasses in the Bounded Form of Meromorphic Functions"

Moscow, Izbestiya AN SSSR, Seriya Matematicheskaya, Vol 34, No 6, November-December 1970, pp 1262-1339

Abstract: This paper is an investigation of class N functions of the bounded Nevanlinna form, meromorphic in the circle $|z|<1$, with the important boundary condition that if $F(z) \in N$, the finite radial limit

$$F(e^{i\theta}) = \lim_{r \to 1-0} F(re^{i\theta}), \quad \theta \in /0, 2\pi/,$$

exists for all θ, with the possible exception of an excluded set $E \subset /0, 2\pi/$ of zero linear dimensions. In this connection, the authors discuss the work of Frostman, Blaschke, and Carleson. Regarding the problem of constructing a complete theory of the fac-

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DZHRBASHYAN, M. M., et al, Izvestiya AN SSSR, Seriya matematicheskaya, Moscow, Vol. 34, No. 6, November-December 1970, pp 1262-1339

torization of the functions that are meromorphic in the circle $|z|$, the authors cite the work of the first-named author of this paper (Teoriya faktorizatsii funktsiy, meromorfnykh v kruge -- Theory of the Factorization of Functions Meromorphic in a Circle -- Collection, 79(121) 1969, pp 517-615). The present article consists of the most important viewpoints on some of the basic results of the Dzhrbashyan article just cited, concerning the determination and factorization of the meromorphic functions $N\{\omega\}$ associated with the arbitrary function $\omega(x)$. Using these results, the authors investigate the boundary conditions of this class of functions for the case in which $\omega(x)$ does not drop at (0,1) and the exclusion $N\{\omega\} \subset N$ occurs.

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002200720015-2

USSR

UDC 669:15.018.8:539.42:669.4

GAVZE, M. N., SOKOLOV, V. D., and DZHRINSKAYA, YE. G.

"Effect of Lead Melt on the Character of the Failure of Some Brands of Alloyed Boiler Steel"

Vliyaniye rasplava svintsa na kharakter razrusheniya nekotorykh marok legirovannoy kotel'noy stali (cf. English above. Institute of Metallurgy, Academy of Sciences USSR), Moscow, 1970, 9 pp, ill., bibliography with seven titles (no 2361-70 Dep.) (from RZh-Metallurgiya, No 3, Mar 71, Abstract No 3I611 DEP by authors)

Translation: The article states the fundamental principles of the rational selection of alloyed steel for refining boilers and describes results of a study of the brittle failure of steel under the action of a melt of partially refined Pb. It is shown that the risk of this phenomenon can be significantly lessened by complex alloying.

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002200720015-2

USSR

UDC 632.954:633.11:633.16

DZHUGARYAN, O. A., Candidate of Agricultural Sciences, Academy of Sciences Armenian SSR

"The Influence of the Herbicides 2,4-D on Wheat and Barley"

Moscow, Zashchita Rasteniy, No 4, 1972, p 29

Abstract: Winter wheat can be cultivated with a 0.5-2.0 kg/hectare dose of crotylin in the tillering stage as well as in the stooling stage, but spring wheat can be sprayed only in the tillering stage (0.3-0.6 kg/hectare). Spring barley should be sprayed only in the tillering stage; crotylin 0.3-0.5; sodium salt 2,4-D 1.0-1.5; amino salt 0.75-1.1 kg/hectare. Late spraying deforms barley ears. The herbicides increase the quantity of nitrogen, thus reducing the yield of grain, and greatly decrease the quantity of carbohydrates in the grain.

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002200720015-2

USSR

UDC: 772.99

KAKICHASHVILI, Sh. D., DZHUGELI, B. P., Institute of Cybernetics, Academy of Sciences of the Georgian SSR

"Circular Holographic Recording in Opposed Beams"

Moscow, Zhurnal Nauchnoy i Prikladnoy Fotografii i Kinematografii, Vol 18, No 3, May/Jun 73, pp 179-181

Abstract: The paper describes a system of holography in which the film takes the form of a cylinder surrounding the object, and the reference and object waves travel in opposite directions (reflection holography). The main advantage of this method is that it permits use of a more diffuse and less monochromatic light source in reconstruction of the wavefront. The reference beam is shaped into a conical wave which is then reflected from the inside surface of a cylindrical mirror from which it is sent to the object. A helium-neon laser was used in holography, and the STs-61 incandescent lamp was used in reconstructing the wavefront. Shrinkage of the emulsion is an important factor, especially since the image is curved. A formula is given for the limiting angular field of view. The authors thank A. V. Borin and N. S. Gafurova for supplying the high-resolution holographic film.

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Materials

USSR

UDC 535.317.1

KAKICHASHVILI, SH. D., CHIKVAIDZE, D.V., DZHUGELI, B. P.

"Large-Sized Holograms On Film Photomaterial"

Tekhnika kino i televideniya, No 4, Apr 1972, pp 9-11

Abstract: A technique developed by the authors for obtaining and showing large-sized film 3-dimensional holograms is described. Flat (50 x 100 cm) and circular (19-cm high and 60-cm in diameter) holograms of 3-dimensional objects were obtained by means of a LG-75 He-Ne laser in a single-mode regime with the use of a two-beam scheme. Professor A. V. Borin and N. S. Gafurova submitted the high-quality holographic photomaterials. Professor B. K. Balavadze made it possible to conduct the experiments in the Division Of Gravimetry, Institute Of Geophysics, Academy Of Sciences, Georgian SSR. 4 fig. 6 ref.

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002200720015-2

USSR

DZHUGAN, F. K.

UDC: 8.74

"Algorithm for Exchange of Information Between a Computer Complex and I/O Devices Over Third-Rank Communication Lines in a Modular System of Computer Facilities"

Tr. NII upravl. vychisl. mashin (Works of the Scientific Research Institute of Control Computers), 1972, vyp. 4, pp 46-59 (from RZh-Kibernetika, No 8, Aug 72, Abstract No 8V602)

Translation: The paper describes an algorithm for exchange of information over a third-rank communication line in a modular system of computer facilities. The algorithm guarantees a data transmission certainty of 10^{-8} when data transmission equipment with a transmission rate of 20 000 bits/s is used. Author's resumé.

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002200720015-2

USSR

UDC: 8.74

DZHUGAN, F. K., KMETIK, N. Ye., BEZMOLITVENNYY, O. V.

"A Combined I/O Device"

Tr. NII upravl. vychisl. mashin (Works of the Scientific Research Institute of Control Computers), 1971, vyp. 4, pp 46-59 (from RZh-Kibernetika, No 8, Aug 72, Abstract No 8V603)

Translation: The article gives the particulars of an algorithm and the principle of the circuitry of a combined I/O device for punched tapes which is based on discrete elements. Authors' Resumé.

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002200720015-2

1/2 014 UNCLASSIFIED PROCESSING DATE--11DEC70

TITLE--CHANGES IN ATPASE ACTIVITY IN ATHEROSCLEROTIC RABBITS -U-

AUTHOR-(05)-ASATIANI, V.S., KARCHKHADZE, R.G., SHAMKULASHVILI, G.G., DZHUGELI, I.S., SILAGADZE, L.S.

COUNTRY OF INFO--USSR

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2/2 014 UNCLASSIFIED PROCESSING DATE--11DEC70

CIRC ACCESSION NO--AP0135708

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN RABBITS THE HIGHEST ATPASE ACTIVITY IS IN THE MITOCHONDRIA OF CARDIAC MUSCLE. ON COMPARING VARIOUS IONS (K, NA, MG, CA), ONLY MG ACTS AS AN ACTIVATOR OF ATPASE IN HEART, BRAIN, AND LIVER. IN ATHEROSCLEROTIC RABBITS, THE ATPASE ACTIVITY IS LOWER IN MITOCHONDRIA BUT HIGHER IN THE SUPERNATANT FRACTION.

FACILITY: TBILIS. GOS. MED. INST., TBILISI, USSR.

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USSR

UDC 621.791.052:620.17:539.214:
669.14.018.295

LUK'YANOV, V. F., Candidate of Technical Sciences, LYUDMIRSKIY, Yu. G., Engineer (Rostov Institute for Agricultural Machinery) and DZHULAY, L. L., Engineer (Kursk Polytechnic Institute)

"Strength and Ductility of Welded Joints in High-Strength Steel"

Moscow, Svarochnoye Proizvodstvo, No 4, Apr 72, pp 33-35.

Abstract: This work presents a study of the influence of carbon in medium-alloy, high-strength steel on the strength and ductility of welded joints and develops methods for improving these characteristics. Studies were performed using experimental melts of type KVK steel, differing primarily in carbon content. The welding mode was: current 40-46 a, voltage 7.5-8 v, argon flow rate 6-7 l/min, welding speed 9 m/hr. After welding, the specimens were high tempered at 650°C for 1 hour, then hardened at 940°C, 30 minutes cooled in air and low tempered at 220°C, 2 hours. The optimal carbon content in the steel studied for welding of pressure vessels was found to be 0.39-0.42%, since further increases in carbon content caused a reduction in the structural strength of the welded joint. With carbon contents of 0.39-0.42%, homogenization of metals in slabs before rolling allows signifi-

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UDC 621.791.052:620.17:539.214:
669.14.018.295

LUK'YANOV, V. F., LYUDMIRSKIY, Yu. G., DZHULAY, L. L., Moscow, Svarochnoye Proizvodstvo, No 4, Apr 72, pp 33-35.

cant increases in joint ductility, which may equal that of the base metal, without significantly changing strength. The use of isothermal annealing after welding for structures of steel containing 0.4-0.43% carbon helps to increase their strength by more than 10-15%, ductility by more than 50%.

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DZHUL'FAYAN, M. Kh.

COLEEN

106. USSR

UDC 577.22+611--0.18.82 : 519.24

GASPARYAN, Yu. M., GAMBARYAN, L. S., and DZHUL'FAYAN, M. Kh.

SO: FOREIGN PRESS DIGEST 29 OCT 71

"One Statistical Model of an Elementary Biological System"

Kiberneticheskiye Aspekty v Izuchenii Raboty Mozga (Cybernetic Aspects of the Study of the Brain's Functioning), Moscow, Nauka Publishing House, 1970, pp 215-222

Abstract: A statistical model of an elementary biological system is examined; it takes into account somewhat approximately the well-known knowledge of electrophysiology of recent years and also some hypotheses suggested by the authors.

Modeling on a digital computer is the method of study employed.

The operation algorithm of the system is broken down into four stages: 1) "peripheral" coding, 2) transmission of information along communication channels from receptors to synaptic knobs, 3) synaptic transmission, and 4) integration of information received in the cell. Analytical descriptions of all four stages of the system's operation have been obtained.

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002200720015-2

USSR

UDC: 51:621.391

DZHUMABAYEV, Kh.

"Use of the Random Search Method for Solving a Class of Permutation Problems"

Tashkent, Vopr. vychisl. i prikl. mat.--sbornik (Problems of Computational and Applied Mathematics--collection of works), vyp. 11, 1972, pp 79-84 (from RZh-Kibernetika, No 10, Oct 72, abstract No 10V601)

[No abstract]

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002200720015-2

USSR

UDC 615.5

DAULETBEKOV, L. S. and DZHUMAGALIYEVA, F. D., Institute of Physiology, Kazakh SSR Academy of Sciences

"The Influence of Ziziforin on the Activity of the Oxidative Enzymes During Hypoxia"

Alma-Ata, Izvestiya Akademii Nauk Kazakhskoy SSR, Seriya Biologicheskaya, No 4, Jul/Aug 73, pp 69-72

Abstract: The effect of ziziforin administration on succinate dehydrogenase, lactage dehydrogenase, alphaketoglutarate dehydrogenase and cytochrome oxidase in the tissues of the myocardium, liver and kidney of white rats which had been subjected to moderate chronic hypoxia was investigated. It was found that the activity of all the enzymes increased in the experimental animals compared to untreated controls subjected to hypoxia. This result is said to indicate that ziziforin increases the resistance of cells to hypoxia by activating these enzymes.

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Acc. Nr: AP0048370 Abstracting Service: INTERNAT. AEROSPACE ABST Ref. Code: 5-70 21R0293

D

A70-24319 # Small vibrations of systems with a solar sail (O malykh kolebaniiakh sistem s solnechnym parusom). N. D. Ozbumaliev and M. I. Kiselev. *Kosmicheskie Issledovaniia*, vol. 8, Jan.-Feb. 1970, p. 148. In Russian.

Approximate solution of the problem concerning the effect of small natural vibrations of a system propulsed by a solar sail on the motion along a heliocentric orbite. It is found that the resonance effects arise during a perturbed motion when the natural vibrations of the sail are equal to its angular rotation rate. Z.W.

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002200720015-2

Acc. Nr. AP0053893 Abstracting Service: CHEMICAL ABST. 6/70 Ref. Code 4R0025

117384f Polarographic determination of mercury, antimony, and arsenic in sulfide-alkaline solutions. Gladyshev, V. P.; Dzhumashev, A. (Kirgiz State Univ., Frunze, USSR). *Zh. Anal. Khim.* 1970, 25(1), 189–92 (Russ). Hg, Sb, and As can be detd. polarographically in sulfide-alk. solns. and As and Hg and Sb and Hg can be detd. in the presence of each other by using 0.25*M* NaOH with 0.25*M* Na_2S as the electrolyte. To a sample soln. (2–5 ml) contg. 1.5 mg of the element to be detd., add 15 ml of the electrolyte, then remove O with 5 ml of a satd. Na_2SO_3 soln., and dil. to 25 ml with H_2O. Det. Hg, Sb, and As polarographically at $E_{1/2}$ = −0.9, −1.46, and −1.6 V, resp.
Chaim Weiner

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P.N. 18

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Physiology

USSR UDC 577.15.041

MEYERSON, F. Z., MIRRAKHIMOV, S. M., AYDARALIYEV, A. A., and DZHUMUSHEV, M. D., Institute of Normal and Pathological Physiology, Academy of Medical Sciences USSR, Moscow, and Kirgiz State Medical Institute, Frunze

"Effect of Preliminary Conditioning on Oxygen Pressure in the Cerebral Cortex During Gradual High-Altitude Hypoxia"

Moscow, Doklady Akademii Nauk SSSR, Vol 195, No 1, 1970, pp 252-255

Abstract: Adaptation to the discontinuous action of high-altitude hypoxia has a significant effect on the resistance of the cerebrum to oxygen insufficiency. This effect is considered to be due to the combination of two mechanisms acting at two different levels. One of these mechanisms enhances the transport of oxygen to the brain. The dynamics of the oxygen pressure in the cerebrum of trained and untrained rats subjected to stepwise "ascent" in a pressure chamber was studied polarographically. The O_2 pressure was measured chrono-amperometrically with a 100-micron Pt electrode which had been inserted 500 microns deep into the rats' brains. For each experiment, the electrodes were calibrated in solutions of known O_2 content. Four series of experiments were run, with 11-12 animals in each series. In the first series, untrained animals were tested; in the other series, the

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USSR

MEYERSON, F. Z., et al, Doklady Akademii Nauk SSSR, Vol 195, No 1, 1970, pp 252-255

animals were trained for periods of 10, 20, or 40 days. Training consisted of keeping the animals in the pressure chamber for 6 hours each day, with the pressure simulating that at an altitude of 1,000 m on the 1st day, 2,000 m on the 2nd day, 3,000 m on the 3rd day, 4,000 m on the 4th day, 5,000 m on the 5th and 6th days, 6,000 m on the 6th and 7th days, and 7,000 m for the remainder of the training period. Some measurements were made with the test animals at a simulated altitude of up to 12,000 m. The results of the measurements were tabulated. It was found that at a height of 4,000 m the drop in cerebral oxygen pressure is still almost the same for both trained and untrained groups. At greater altitudes, the difference between trained and untrained groups becomes more obvious. After 20 and 40 days of training, it was found that protein synthesis in the blood was increased by 60-80%. It is speculated that ATP may be used in the adaptation of the blood to the surrounding medium. It is concluded that, whereas up to a height of 6,000-7,000 m trained alpinists may not experience any discomfort, at higher altitudes disturbances in brain functions may occur.

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USSR UDC 621.396.677.095.1:621.396.96

POTEKHIN, V.A., DZHUN', V.I., KANAREYKIN, D.B.

"Concerning The Choice Of Receiving Antenna Polarization In Radar Stations With A Synthesized Aperture"

Radiotekhnika i elektronika, Vol XVII, No 3, Mar 1972, pp 488-492

Abstract: Previous works have shown that in principle the resolution of radar systems with a synthesized aperture (RSA) can be improved by the method of polarized selection of target and background signals. In the present paper the possibilities are considered of such an increase of the resolution of RSA under the condition of steadiness and ergodicity of the interference reflections. The results obtained can be used in all areas of radio engineering where antenna arrays are used (radio astronomy, radio navigation, etc.) for an evaluation of the gain in the resolution because of polarized selection. 1 fig. 9 ref.
Received by editors, 24 Dec 1970.

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002200720015-2

USSR UDC 542.91+661.718.1

BEYSHEKEYEV, ZH., DZHUNDUBAYEV, K., ALDASHEVA, A., KOZHAKHMETOVA, R. I., TOKTOBEKOVA, T.

"Phosphorylation of 10-(2,3-Epoxypropyl)phenothiazine"

Leningrad, Zhurnal Obshchey Khimii, Vol 41, No 10, 1971, pp 2207-2209

Abstract: In a continuing search for physiologically active phenothiazine derivatives, a study was made of the reaction of 10-(2,3-epoxypropyl)phenthiazine with β-alkoxyvinylphosphonic anhydrides, thio- and dithioanhydrides. A series of previously unknown crystalline heterocyclic esters were prepared by the cited reaction. The reaction with thioanhydrides gave the esters with a 1,2,3-oxaphosphathiazole ring structure, as indicated by their IR spectra. The yields, mp, and elemental analysis data of the products are tabulated and their preparation is described.

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USSR

UDC 542.91+661.718.1

PETROV, K. A., KHORKHOYANU, L. V., BEYSHEKEYEV, Zh., and DZHUNDUBAYEV, K.

"Phosphorus-containing Phenothiazine Derivatives"

Leningrad, Zhurnal Obshchey Khimii, Vol 41, No 1, Jan 71, pp 110-114

Abstract: In searching for physiologically active substances the authors synthesized previously unknown phosphates, phosphonates and thiophosphonates of phenothiazine derivatives with residues of phosphorus acids bonded to the nitrogen atom of the phenothiazine nucleus by a hydrocarbon chain. [β-(Phenothiazinyl-10) isopropyl] phosphates were obtained by the reaction of chlorophosphates with 10-(β-hydroxypropyl)phenothiazine. Bis[β-(phenothiazinyl-10)isopropyl] methylphosphonate was obtained from methylphosphonic acid dichloride and 10-(β-hydroxypropyl)phenothiazine. [β-(Phenothiazinyl-10) isopropyl] diethylthiophosphinate was obtained from the diethylamide of diethylphosphinous acid and 10-(β-hydroxypropyl)phenothiazine with subsequent addition of sulfur to the phosphinite. Sodium phenothiazine reacts with diethyl esters of chloromethyl- and β-chloroethylphosphonic acids to give N-ethylphenothiazine and diethyl [β-(phenothiazinyl-10)ethyl] phosphonate respectively. The oxidation of [β-(phenothiazinyl-10)isopropyl] phosphates was studied.

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USSR UDC 547.341

PETROV, K. A., KHORKHOYANU, L. V., DZHUNDUBAYEV, K., SULAYMANOV, A.

"Synthesis and Properties of β-Alkoxyvinylphosphonic Anhydrides I."

Leningrad, Zhurnal Obshchey Khimii, Vol 40, No 9, Sep 70, pp 1968-1970

Abstract: To the dichloroanhydride of β-ethoxyvinylphosphonic acid in anhydrous toluene, water was added dropwise at 20° followed by heating the reaction mixture for 2 hrs at 110° under a stream of nitrogen. The solvent was evaporated and the residue kept 2-3 hrs at 2-3 mm vacuum and 100-110° to yield the anhydride of β-ethoxyvinylphosphonic acid (I), m.p. 75-76°, a thermally stable hydroscopic, brittle material. Another way of obtaining (I) was by adding water to the starting dichloroanhydride kept in anhydrous benzene-pyridine mixture; absolute methanol could be substituted for water. To obtain a monoalkyl ester, (I) dissolved in anhydrous benzene or toluene was refluxed 6-10 hrs with anhydrous alcohol in a dry atmosphere. After removing the solvent, the residue was kept at 90-110°/7-8mm for 2-3 hrs, yielding the product -- dark syrupy

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PETROV, K. A., et al, Zhurnal Obshchey Khimii, Vol 40, No 9, Sep 70, pp 1968-1970

liquids. The anhydrides were characterized by conversion to ammonium and calcium salts.

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USSR UDC 547.341.07

PETROV, K. A., KHORKHOYANU, L. V., DZHUNDUBAYEV, K., SULAYMANOV, A., and PRIGORENKO, P. G.

"A Method of Making β-Alkoxyvinylphosphonic Acid Anhydrides"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 27, 1970, Soviet Patent No 279615, Class 12, filed 6 May 69, p 29

Abstract: This Author's Certificate introduces: 1. A method of making β-alkoxyvinylphosphonic acid anhydrides. As a distinguishing feature of the patent, β-alkoxyvinylphosphonic acid dichloride is interacted with water, and conventional methods are used to remove the hydrogen chloride which is released. 2. A modification of this method distinguished by the fact that the process is carried out in an organic solvent such as benzene.

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002200720015-2

USSR UDC 547.341

PETROV, K. A., KHORKHOYANU, L. V., DZHUNDUBAYEV, K., SULAYMANOV, A.

"Synthesis and Properties of β-Alkoxyvinyl Phosphonic Anhydrides"

Leningrad, Zhurnal Obshchey Khimii, Vol 40, No 9, Sep 70, pp 1971-1973

Abstract: A new method for the synthesis of anhydrides of β-alkoxyvinylphosphonic acid (I) is described, consisting of the reaction of equimolar quantities of the dichloroanhydride with the complete ester of β-alkoxyvinylphosphonic acid. The product is a monomer. To obtain β-propoxy-α-methylvinylphosphonic anhydride, (I) in an absolute benzene pyridine mixture is reacted with absolute methanol. The reaction mixture is refluxed for 5 hrs, precipitate separated, filtrate washed with benzene, solvent evaporated, and residual mass kept for 1-1.5 hrs at 80-100/10-15 mm. These anhydrides react with epoxides to yield five membered cyclic esters. The epoxides are added in ice followed by heating the reaction mixture for 6-7 hrs to 70-100°.

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USSR UDC 546.26:118.07

RYSKULOV, T., BEYSHEKEYEV, ZH., KOZHAKHMETOVA, R., DZHUNDUBAYEV, K., and ASHIMBAYEVA, B., Institute of Organic Chemistry, Academy of Sciences Kirgiz. SSR

"Organophosphorus Derivatives of Piperazines"

Frunze, Izvestiya Akademii Nauk Kirgizskoy SSR, No 4, Jul-Aug 73, pp 47-49

Abstract: Reaction of monosubstituted amyl- and benzylpiperazines with phosphonic acid dichlorides and phenylamidophosphoric acid chloride in presence of dry triethylamine yields novel amidophosphonates and amidophosphates. All of the amidophosphonates are crystalline products; the di(1-amylpiperazinyl-4)phenylamidophosphate is an oily product which can be isolated by conversion to a picrate. Another possible synthetic method for amidophosphates is based on the reaction of monoamylpiperazine with dialkyl(aryl)phosphoric acid chlorides in benzene and in presence of dry triethylamine.

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USSR UDC 547.26:118.07

RYSKULOV, T., BEYSHEKEYEV, ZH., and DZHUNDUBAYEV, K. D., Institute of Organic Chemistry, Academy of Sciences KirgizSSR

"Synthesis of Phosphates and Thiophosphates Based on 1-Benzyl-4-(β -hydroxypropyl)-piperazine"

Frunze, Izvestiya Akademii Nauk KirgizskoySSR, No 3, May-Jun 73, pp 49-50

Abstract: Searching for new physiologically active compounds, several phosphate and thiphosphate derivatives of 1-benzyl-4-(β -hydroxypropyl)-piperazine (I) were synthesized by reacting (I) with dialkyl(aryl)phosphoric and thiophosphoric acid chlorides in benzene and in presence of triethylamine. No biological data are reported.

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USSR UDC 542.91+661.718.1

DZHUNDUBAYEV, K. D., BEYSHEKEYEV, Zh., ALDASHEVA, A., KOZHAKHMETOVA, R. I., SULAYMANOV, A., TOKTOBEKOVA, T., Institute of Organic Chemistry, Academy of Sciences of the Kirgiz SSR

"Synthesis of Mixed Phosphites Based on 10-[β-Hydroxypropyl(ethyl)]phenothiazine"

Leningrad, Zhurnal Obshchey Khimii, Vol 42(103), No 2, Feb 72, pp 337-340

Abstract: The authors studied the reaction of 10-(β-hydroxypropyl)phenothiazine and 10-(β-hydroxyethyl)phenothiazine with alkyl(aryl)phosphorous acid dichlorides, phosphorus trichloride and dimethylamidophosphorous acid dichlorides:

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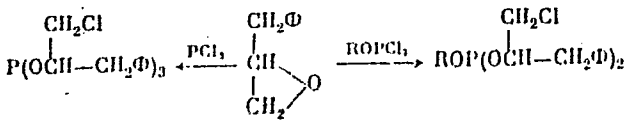
UDC 547.26'118

DZHUNDUBAYEV, K. D., ALDASHEVA, A., BEYSHEKEYEV, Zh., KOZHAKHMETOVA, R. I., Institute of Organic Chemistry, Academy of Sciences of the Kirgiz SSR

"Synthesis of Phosphites Based on 10-(2,3-Epoxypropyl)phenothiazine"

Leningrad, Zhurnal Obshchey Khimii, Vol 42(103), No 2, Feb 72, pp 340-342

Abstract: Neutral phosphites are synthesized by the reaction of 10-(2,3-epoxypropyl)phenothiazine with phosphorus trichloride and various alkyl-(aryl)phosphorous acid dichlorides. The reaction takes place in the presence of small quantities of hydrochloric acid:



Φ-phenothiazinyl-10.

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DZHUNDUBAYEV, K. D., et al., Zhurnal Obshchey Khimii, Vol 42(103), No 2, Feb 72, pp 340-342

The reaction with phosphorus trichloride yields tri[1-chloro-3-(phenothiazinyl-10)propyl-2] phosphite, while the acid dichloride gives di[1-chloro-3-(phenothiazinyl-10)propyl-2] alkyl(aryl) phosphites. The structure of the compounds was identified by IR-spectroscopy.

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UDC 542.91+661.718.1

BARABASH, N. D., DZHUNDUBAYEV, K. D., KOZHAKHMETOVA, R. I., and PORTNOVA, G. V., Institute of Organic Chemistry, Academy of Sciences Kirgiz SSR

"Synthesis of O,O-Diethylethylphosphonyl/N,N,N-diethylaryl(alkyl)/ammonium Halides"

Frunze, Izvestiya Akademii Nauk Kirgizskoy SSR, No 1, Jan-Feb 72, p 60

Abstract: O,O-Diethylethylphosphonyl/N,N,N-diethylaryl(alkyl)/ammonium halides (II) were prepared by the reaction $(RO)_2P(=O)\underset{R'}{C}HNR_2$ (I) + R''X → /$(RO)_2$ $P(=O)\underset{R'}{C}HN\begin{matrix}R_2\\ \diagdown\\ R''\end{matrix}$ /X (II), where R = Et, R' = Me, R'' is CH_2 Ph or Bu, and X = Cl, Br, I. Compounds I were synthesized by known methods. Substances II may be of value as antihelmintics, because salts of quaternary ammonium bases exhibit a wide range of activity of this type. Introduction of a phosphoric acid ester residue will presumably increase the physiological activity of compounds of this class.
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UDC 612.273.2+616-003.96

EPSHTEYN, I. M., ALLIK, T. A., KOROBKOV, A. V., AYDARALIYEV, A. A., DZHUMUSHEV, K. D., AND KUTUEV, A. N., All-Union Scientific Research Institute of Physical Education, and Kirgiz State Medical Institute

"Adaptation Mechanisms of the Cerebral Cortex and of Skeletal Muscles to Hypoxia"

Frunze, Sovetskoye Zdravookhraneniye Kirgizii, No 2, Mar/Apr 72, pp 7-10

Abstract: The utilization of oxygen by the cerebral cortex and skeletal muscles was determined on the basis of the rate constant of oxygen consumption (RCOC). The control group of rats was kept in Frunze and the experimental group was taken to a 3,200 m elevation, where pO_2 was 103 mm Hg. Consumption of oxygen by the brain tissues was recorded by platinum electrodes implanted at a depth of 500 μ. The RCOC by the brain cells was 0.0119, 0.0073, 0.0077, 0.0084, 0.0042, 0.0044 on the 3d, 10th, 20th, 30th, 45th, and 60th days at 3,200 m, respectively (controls 0.0055). Physical exercises (30 min on treadmill) changed these values to 0.0109, 0.0050, 0.0042, 0.0038, 0.0046, 0.0044, respectively (control 0.0054). The RCOC of the calf muscles was 0.0300, 0.063, 0.073, 0.11, 0.23, 0.24 without exercises (control 0.091), and 0.161, 0.161, 0.173, 0.18, 0.17, 0.18 (control 0.143)

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EPSHTEYN, I. M., et al., Sovetskoye Zdravookhraneniye Kirgizii, No 2, Mar/Apr 72, pp 7-10

with exercises. A lower RCOC in the cerebral cortex than in the calf muscles is attributed to the presence of glial cells in the brain which are characterized by a slow oxidative process. The physical exercises inhibited to some extent the oxidative processes in the brain, although the initial adaptation stages to the hypoxia are characterized by acceleration of the excitation processes in the cerebral cortex. Sharply reduced oxygen consumption by the calf muscles during the first several days at 3,200 m is attributed to low permeability of the muscle fibers by oxygen. The oxidative activity in the same muscles increased considerably after physical exercises. Evidently the physical load is more powerful factor than hypoxia with respect to oxygen consumption by muscles.

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115285a $Co(NO_3)_2$-CH_3CONH_2-H_2O and $Ni(NO_3)_2$-CH_3CONH_2-H_2O systems. Dzhunusov, A. D.; Imanakunov, B. I.; Kydynov, M. K.; Druzhinin, I. G.; Karnaukhov, A. S. (USSR). *Zh. Neorg. Khim.* 1970, 15(2), 532–8 (Russ). Heterogeneous equil. were studied in the title systems at 25° and soly. diagrams of the systems are constructed. Four new compds. sep. in the systems: $Co(NO_3)_2.4AcNH_2.2H_2O$, $Co(NO_3)_2.6AcNH_2.2H_2O$ and analogous Ni compds. Thermographs, x-ray powder diffraction patterns, and ir absorption frequencies of these compds. are given.

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